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ABSTRACT

Analytical techniques used in responding to a series of four substantial budget reductions imposed at Oregon State University are described. Over a 2-year period, each of the budget reductions demanded increasingly severe institutional action to meet the specified monetary targets. Different analytical techniques were required to meet the changing circumstances. For the first modest budget cut in June 1980, the analytical tool employed was the log-linear plot, line graphs of the student credit hour (SCH) trends for each of the university's schools and colleges. A logarithmic scale was used to identify academic units that would receive differential budget cuts. After severe budget cuts during 18 months, a computerized budget reduction model was developed that was designed to differentiate among various major categories of expense within overall budgets. Two sets of weighting factors were used for this mathematical model. Finally, in cases where program reduction or elimination was indicated, an effort was made to act equitably among affected units. The analytical tool used to define such equity was the Induced Work Load Matrix, which shows the way in which students majoring in one discipline generate SCH (and thus workload and resource requirements) in other departments. Illustrations of the use of these techniques are included. (SW)

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ANALYTICAL TOOLS FOR BUDGET REDUCTIONS: A CASE STUDY

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THE ASSOCIATION FOR INSTITUTIONAL RESEARCH

This paper was presented at the Twenty-Fourth Annual Forum of the Association for Institutional Research held at the Hyatt-Regency in Fort Worth, Texas, May 6-9, 1984. This paper was reviewed by the AIR Forum Publications Committee and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC Collection of Forum papers.

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The widespread occurrence of income shortfalls for state governments has resulted in a series of substantial budget reductions for many public higher education institutions. This paper describes the analytical techniques used in responding to a series of four substantial budget reductions imposed on a major research university. Although the techniques used were neither extremely sophisticated nor original, they were very successful because of their careful adherence to the particular conception of equity appropriate to each of the decision periods. The paper details each of the techniques, and the rationale for its use at that particular time in the decision process.

The widespread occurrence of income shortfalls experienced by state governments during the early 1980's resulted in a series of substantial budget reductions for many public higher education institutions. Although some states have since undergone a remarkable economic recovery, other states and Canadian provinces continue to face conditions of austerity. The procedures used by institutions to implement their required budget reductions have ranged from straight across-the-board cuts assessed against all departmental budgets, to highly selective cuts that have, in some cases, targeted specific departments or programs for complete elimination.

The purpose of this paper is to describe the analytical techniques used at Oregon State University in responding to a series of substantial budget reductions imposed over a two year period on institutions of the Oregon State System of Higher Education. Each of these budget reductions, having been imposed in addition to the cuts previously implemented, demanded increasingly severe institutional action to meet the specified monetary targets. This forced the university to develop a series of different budget reduction strategies as successive cuts were announced, leading to the application of different analytical techniques appropriate to the changing circumstances. The following paragraphs will describe the specific analytical techniques that were developed and will explain the rationale for their use at that particular point in the budget reduction process.

CASE ONE: THE LOG-LINEAR PLOT

The first budget cut, in June 1980, was quite modest in magnitude. Amounting to only 1% of the institution's E&G budget, the cut could easily have been assessed on an across-the-board basis or even have been satisfied through use of central reserves. However, there was general consensus that this cut represented only the initial skirmish of a far more serious financial battle to come, and thus was viewed as an opportunity to start putting the university's house in order so that it might better face the coming conflict. Therefore, rather than assess budget reductions on an across-the-board basis, the administration publicly proclaimed this situation as an occasion to recognize and redress some of the imbalances that had developed in recent years among the various academic units.

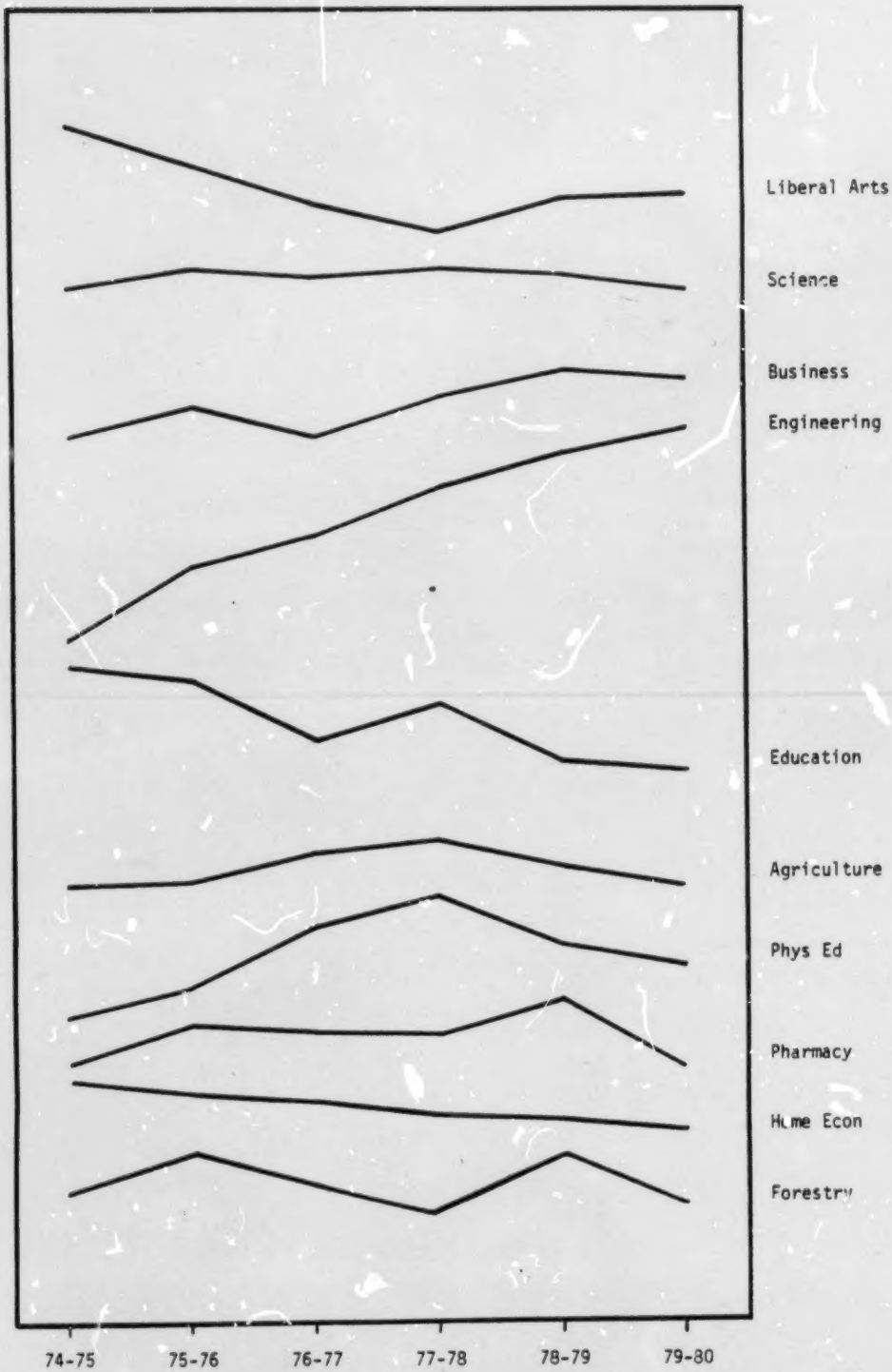
The analytical tool used for this purpose consisted simply of line graphs of the student credit hour trends for each of the university's

FIGURE 1

THREE-TERM STUDENT CREDIT HOURS

UPPER DIVISION

Logarithmic plot, showing percentage changes
(Schools and colleges arrayed ordinally)



schools and colleges. What was a bit out of the ordinary about this analysis was the logarithmic scale used for drawing the graphs; that is, instead of plotting annual student credit hour totals for each unit, the logarithm (base 10) of the SCH was plotted (see Figure 1). Note that such plots can be drawn directly on semi-log graph paper, and no mathematical computations are required. This type of display offered three distinct advantages: First, it allowed the SCH trends for all academic units to be displayed clearly on a single graph, despite the great differences in size between some units and the otherwise overlapping SCH curves of others. Second, such a logarithmic plot directly displays the <u>percentage</u> changes in SCH among all of the academic units, which is a key measure for a subsequent assessment of percentage reductions in individual budgets. Third, this particular graphical technique was clearly understood by the university's executive officers, but not necessarily by all of the deans. One can speculate that some degree of possible dissension was avoided solely because participants were not certain how to contest such foreign mathematical analyses!

The ultimate decision in this budget reduction exercise was to identify some academic units that would receive no cut at all, some that would receive 1% cuts, and others that would receive 2% cuts. This very rough categorization seemed consonant with the relatively modest sums of money involved and the rather narrow focus -- SCH trends only -- of the analysis that was used. More importantly, the stage had now been set for the application of differential budget cuts when more substantial reductions would be required.

CASE TWO: THE MATHEMATICAL MODEL

As was expected, over the following 18 months the university was hit by a series of budget cuts reflecting a growing shortfall in state revenues. What was not expected was the severity of the cuts, amounting in total to about 10% of the institution's E&G budget. Having just previously established the principle of differential budget cuts to address existing imbalances in departmental resources, this principle was now formalized as the basis of a computerized budget reduction model developed for use as part of the decision making process.

In addition to recognizing explicitly the different capacities among various institutional units for absorbing budget reductions, the model was designed to differentiate also among various major categories of expense within such overall budgets. That is, not only would various units of the university receive differential budget cuts in recognition of their relative abundance or scarcity of resources compared to other university units, but the severity of cuts would also differ among different categories of expense (academic salaries, classified wages, services and supplies, equipment, etc.).

The quantitative realization of these design objectives consisted of two sets of weighting factors. Each major university unit was assigned a weight indicating its current relative abundance or scarcity of resources, as determined by comparative cost data from a peer group study of instructional costs for various disciplines. A weight of 100 was assigned to institutional units with expenses falling at the average of those of its peer group; weights greater than 100 indicated units with relatively higher expenses, and weights less than 100 indicated units with relatively lower expenses. The weighting factors for the various expense categories were

intended to indicate a priority ranking among the categories. For example, if academic salaries had a weight of 1.00 and services and supplies a weight of 5.00, this signified that whatever percent reduction would be imposed on a unit's faculty salaries, the services and supplies budget would sustain a reduction five times as severe.

A simple computer model was developed to carry out the required mathematical calculations. Within the model, the university's entire (state supported) budget was arrayed in tabular form, with rows representing budgets of individual institutional units and columns breaking that budget down into its component expense categories. Each row carried a weighting factor indicating that unit's relative abundance or scarcity of resources, and each column carried a weighting factor indicating the relative priority assigned to that category of expense. Given these two sets of weighting factors and a total dollar target for the entire budget cut, the model would compute for each cell in the matrix the dollar reduction necessary to satisfy all weighting factors while producing a total dollar reduction equal to the input target. The budget reduction recommendations produced by this model then became the starting point for further analysis and ultimate decision making.

Figure 2 shows the format of the model. The information in the upper left-hand corner identifies this as trial run number 25; the total budget cut target is $2,000,000, with $700,000 to come from personnel budgets and $1,300,000 to come from non-personnel expenses. The column headings are expense category codes (1100 is academic salaries, 1300 classified staff wages, 1900 employee benefits, 2000 services and supplies, etc), and the numbers in parentheses are the weighting factors for this run of the model. The rows indicate the total E&G budgets of various institutional units, with

FIGURE 2

CASE: 25
CURRENT .7 AND 1.3
TARGET REDUCTION: $2000000.

BUDGET ANALYSIS
ORIGINAL BUDGET

08/07/80

		1100.	1200.	1300.	1400.	1500.	1600.	1900.	2000.	4000.	TOTAL
TOTALS		20471191.	139276.	9131287.	173751.	598626.	1156138.	7982408.	7150833.	2142429.	48945939.
		(1.00)	(2.00)	(1.50)	(3.00)	(3.00)	(1.00)		(7.84)	(15.68)	
AGRICULTURE	(95)	1551705.	404.	249299.	2033.	6543.	60750.	480407.	16327.	53145.	2420613.
VETERINARY MEDICINE	(117)	435439.	0.	117980.	640.	3200.	0.	147225.	132772.	30862.	868118.
FORESTRY	(95)	774366.	0.	73224.	819.	14626.	30870.	226293.	52756.	30000.	1202954.
LIBERAL ARTS	(102)	4737087.	2748.	336340.	1844.	24607.	14538.	1349544.	139202.	86845.	6712755.
SCIENCE	(107)	5105971.	4563.	940153.	15715.	54987.	819662.	1603028.	685312.	182029.	9311410.
OCEANOGRAPHY	(136)	398406.	0.	134406.	0.	0.	0.	141515.	239719.	13000.	927046.
BUSINESS	(79)	0.	0.	0.	0.	0.	0.	0.	61567.	18367.	79934.
EDUCATION	(117)	1251105.	0.	118488.	0.	11593.	37493.	364795.	98634.	39377.	1921485.
ENGINEERING	(86)	0.	0.	0.	0.	0.	0.	0.	230932.	211080.	442012.
HOME ECONOMICS	(105)	887876.	0.	114564.	0.	9312.	29953.	267073.	53406.	28044.	1392228.
PHARMACY	(108)	503231.	0.	95178.	0.	0.	25210.	159467.	39053.	16000.	838139.
HEALTH,P.E.	(107)	1068538.	1075.	284995.	1241.	24051.	69197.	362072.	94088.	30909.	1936166.
V.P.ADMINISTRATION	(100)	840599.	9148.	1393758.	12517.	53622.	2729.	653503.	1189787.	52863.	4408526.
V.P.STUDENT SERVICES	(100)	437118.	16745.	194728.	18232.	15430.	23796.	177932.	28591.	20499.	933071.
LIBRARY	(100)	682802.	0.	487593.	0.	251449.	0.	316137.	87949.	944179.	2770109.
PHYSICAL PLANT	(100)	36404.	9528.	3562011.	104236.	49000.	0.	986984.	2960626.	63000.	7771789.
RESEARCH	(100)	829152.	63146.	196570.	11929.	15833.	16374.	293048.	465194.	254553.	2145799.
PRESIDENT'S UNITS	(100)	931452.	31919.	732000.	4545.	64373.	25566.	453386.	403407.	67627.	2714275.
LAND GRANT PROGRAM	(100)	0.	0.	0.	0.	0.	0.	0.	149511.	0.	149511.

the weighting factors again shown in parentheses. Cells of the matrix containing zeroes indicate expenses that were to be immune from cuts for this run. Figure 3 shows the budget cuts that would be assessed against each cell of the matrix on the basis of these weighting factors -- note that they sum to the required $2,000,000 in the lower right-hand corner.

OBJECTIVITY AND EQUITY

The salient characteristic that makes substantial budget cuts in academia so difficult to implement is that there is typically no single correct decision. Rather, there invariably exist a variety of different strategies that would achieve the required budget cut -- none standing out as clearly preferable in every respect to the others, and each vociferously challenged (usually with good reason) by some faction of the university community. It goes without saying (and for political reasons, almost never is stated) that virtually every significant budget cut decision has a certain element of arbitrariness to it. Such arbitrary elements of the decision may be publicly acknowledged as "subjective judgements", or may be disguised as objective parameters without admitting the uncertainty of the environment in which they were selected. However incorporated into the analysis, they are endemic to decisions of this type. The unenviable challenge facing the institutional decision maker is to rally widespread support and agreement for one specific budget reduction strategy, even though the decision may have entailed essentially arbitrary choices between equally worthy courses of action.

It is the contention of this paper that such widespread support has the best chance of being obtained if the proposed decision has fulfilled three essential requirements: First, it must be clear to all parties that the

FIGURE 3

CASE: 25
CURRENT .7 AND 1.3
TARGET REDUCTION: $2000000.

BUDGET ANALYSIS
REDUCTIONS

08/07/80

		1100. (1.00)	1200. (2.00)	1300. (1.50)	1400. (3.00)	1500. (3.00)	1600. (1.00)	1900.	2000. (7.84)	4000. (15.68)	TOTAL
AGRICULTURE	(95)	21117.	11.	5089.	83.	267.	827.	7008.	1742.	11343.	47487.
VETERINARY MEDICINE	(117)	7298.	0.	2966.	32.	161.	0.	2738.	17450.	8112.	38757.
FORESTRY	(95)	10538.	0.	1495.	33.	597.	420.	3226.	5630.	6403.	28343.
LIBERAL ARTS	(102)	69217.	80.	7372.	81.	1079.	212.	20412.	18241.	19901.	136594.
SCIENCE	(107)	78263.	140.	19317.	723.	2529.	12564.	26463.	82370.	43769.	266137.
OCEANOGRAPHY	(136)	7762.	0.	3928.	0.	0.	0.	3105.	36622.	3972.	55388.
BUSINESS	(79)	0.	0.	0.	0.	0.	0.	0.	5464.	3260.	8723.
EDUCATION	(117)	20969.	0.	2979.	0.	583.	628.	6386.	12963.	10350.	54859.
ENGINEERING	(84)	0.	0.	0.	0.	0.	0.	0.	22309.	40782.	63091.
HOME ECONOMICS	(105)	13355.	0.	2585.	0.	420.	451.	4252.	6535.	6615.	34213.
PHARMACY	(168)	7786.	0.	2209.	0.	0.	390.	2663.	4738.	3882.	21667.
HEALTH,P.E.	(107)	16378.	33.	6553.	57.	1106.	1061.	6160.	11309.	7430.	50086.
V.P.ADMINISTRATION	(100)	12042.	262.	34246.	538.	2304.	39.	12556.	133649.	11876.	207513.
V.P.STUDENT SERVICES	(100)	6262.	480.	4184.	784.	663.	341.	3131.	3212.	4605.	23661.
LIBRARY	(100)	9781.	0.	10477.	0.	10806.	0.	5608.	9879.	212120.	258671.
PHYSICAL PLANT	(100)	521.	273.	76540.	4480.	2106.	0.	21774.	332568.	14154.	452415.
RESEARCH	(100)	11078.	1809.	4224.	513.	680.	235.	4912.	52255.	57188.	133694.
PRESIDENT'S UNITS	(100)	13343.	914.	15729.	195.	2764.	366.	8082.	45315.	15193.	101905.
LAND GRANT PROGRAM	(100)	0.	0.	0.	0.	0.	0.	0.	16795.	0.	16795.
TOTALS		306511.	4003.	199892.	7518.	26068.	17533.	138476.	819044.	480956.	2000000.

final decision was based on the most objective analysis of the alternatives that was possible within the prevailing time constraints. Second, all segments of the university community must be made to feel that the negative impacts of the decision have been assessed across the entire community as equitably as possible. Third, the person with ultimate authority and responsibility for the decision must feel comfortable with it.

In the case of the computerized budget reduction model described above, it was freely acknowledged that both sets of weighting factors were quite subjective in nature. The weighting factors for the various institutional units perhaps seemed more objective due to their derivation by straightforward mathematical manipulations on the peer institution data. The many arbitrary elements entering into such inter-institutional comparisons, however, could easily have been cited in any attempt to discredit the model. The weights used to establish priorities for the various expense components were more obviously arbitrary in nature, although they were constructed to reflect as faithfully as possible the spending priorities common to both faculty and administration at that time.

The fact that this management tool was strongly endorsed by both faculty senators and academic administrators despite the clearly arbitrary nature of some of its key elements reflects the model's use rather than its construction. The model, which has since been adapted for a microcomputer spreadsheet analysis program, was run at least 40 times -- each time exploring a different configuration of priorities among expense categories, different weightings among the institutional units, or different aggregate cuts between the university's academic units and its support services. By analyzing the results of such runs, administrators developed a more sophisticated understanding of the interactions between the two sets of

weighting factors in determining relative budget cuts. This process ultimately resulted in identification of four or five scenarios, each representing some realistic and fair assessment of relative workloads and commonly accepted spending priorities. The president of the university was then able to use these scenarios as the basis of a final budget reduction plan that also incorporated his own personal view of the institution's current needs and future development.

Thus, the three essential characteristics of a budgetary decision process, as listed above, were incorporated into this model's construction and use. First, the analysis was carried out in as objective and comprehensive a fashion as was possible given the available data and the severe time limitations. The seemingly arbitrary assignment of weighting factors was made acceptable by their use as sensitivity analysis parameters in a series of different model runs. Second, equity of the analysis and the resulting implementation was assured because the model itself was comprehensive, incorporating the budgets of all major units of the university and manipulating all such budgets simultaneously within the same mathematical framework. Any differences among the budget cuts recommended for the various units resulted solely from application of the weighting factors, which were prominently displayed in each of the model's output reports. Third, the iterative process that was used resulted in identification of a set of alternative budget reduction plans, all of which were equally defensible from an analytic standpoint. Thus the president, who bore ultimate institutional authority and responsibility for allocation of the cuts, was left sufficient flexibility to develop a final budget reduction plan based on these proposals, but yet fully consistent with his own view of university needs and priorities.

CASE THREE: EQUITY THROUGH THE IWLM

As has been experienced at other institutions, budget reduction requirements can eventually reach the point where general reductions on the basis of workload comparisons are no longer feasible. The institution then has no choice but to consider the substantial shrinkage or elimination of specific programs or departments. Although there is no way to implement such decisions without provoking a certain amount of dissension and emotional reaction, the decision process certainly ought to be structured so as to minimize to the greatest extent possible such divisive repercussions. At Oregon State University a strategy was adopted that gave full and very visible prominence to the three essential characteristics described above.

First, the recommendations for program reductions or eliminations were prepared by a select committee of eight faculty members appointed by the Faculty Senate. All meetings of this committee were attended by the two top administrative officers of the university, thereby assuring that the ultimate recommendations would be made in complete knowledge of the pertinent impacting factors. By this means, the alternatives were discussed and analyzed in the most comprehensive and objective fashion possible in the very short time available.

Second, every attempt was made to see that the impact of any program reduction or elimination would be felt equitably among all affected units. The analytical tool used to define such equity was the Induced Work Load Matrix (IWLM), which shows the way in which students majoring in one discipline generate SCH (and thus workload and resource requirements) in other departments of the university. Figure 4, for example, indicates the effect that students majoring in elementary education have on selected other university departments. The first step was to establish a standard cost

FIGURE 4

THE EFFECT OF ELEMENTARY EDUCATION MAJORS
ON OREGON STATE UNIVERSITY

Course prefix	Discipline name	Proportion of total course prefix undergraduate SCH taught to Elem. Ed. majors in 1980-81	
Ed	Education	34.8 %	(7284 SCH)
SEd	Science Education	14.9 %	(193 SCH)
Oc	Oceanography	8.7 %	(141 SCH)
SPa	Speech Pathology	7.1 %	(72 SCH)
GS	General Science	6.3 %	(768 SCH)
H	Health	6.0 %	(443 SCH)
Geog	Geography	5.1 %	(279 SCH)
PE	Physical Education	5.0 %	(426 SCH)
FRM	Family Resource Management	4.7 %	(201 SCH)
FL	Family Life	4.2 %	(278 SCH)
Span	Spanish	3.9 %	(149 SCH)
Eng	English	3.8 %	(387 SCH)
TA	Theater Arts	3.7 %	(39 SCH)
Soc	Sociology	3.5 %	(473 SCH)
Sp	Speech	3.3 %	(414 SCH)
Fr	French	2.4 %	(120 SCH)
Art	Art	2.2 %	(247 SCH)
Wr	Writing	2.2 %	(336 SCH)
J	Journalism	2.1 %	(161 SCH)
Mus	Music	2.0 %	(110 SCH)

Students majoring in Elementary Education: (Winter term data)

1976-77	501
1977-78	430
1979-79	356
1979-80	352
1980-81	324
1981-82	392

figure for a full-time student at the university; this was calculated as $3690, as shown in Figure 5. From this number, an overall cost savings to the institution was calculated for each proposed program reduction or elimination by estimating the number of students that would choose to leave the university following such actions. For each institutional unit, the financial repercussions of specific program reductions were directly calculated using the IWLM, and budgets were adjusted accordingly (see Figure 6 -- the right-hand column was for the president's use in deciding upon a final cut). Thus, the overall expenditure reduction associated with each specific program cut was automatically prorated across the entire university based on the impact that would be felt by each institutional unit subsequent to such a cut.

Third, the committee was requested to develop budget cut recommendations in excess of the amount actually required. In part this represented contingency planning for the possible imposition of yet another statewide budget cut. But in fact, its real function was to allow the president a certain lattitude in choosing the exact budget reductions to be implemented. This process of analysis and implementation proved extremely successful: the mandated budget reduction was achieved with virtually no overt disruptive reaction to the decisions that were made. It must be stated, however, that in this particular instance no existing department or major program was proposed for complete elimination; rather, several programs were reduced through enrollment limitations or cutbacks in specific areas of emphasis.

FIGURE 5

ACTUAL STATE FUNDS EXPENDITURES* BY SCHOOL AND COLLEGE (1980-81)

Unit	Total Expenditures (1980-81)	Percent	Total SCH (1980-81)	Percent	"Full" Unit Cost Per SCH
Agriculture	$2,436,155	6.9 %	33,511	4.7 %	$ 73
Vet Medicine	859,071	2.4	2,751	0.4	312
Forestry	1,149,247	3.3	17,926	2.5	64
Liberal Arts	6,827,082	19.4	209,339	29.1	33
Science	9,982,593	28.3	205,130	28.5	49
Oceanography	1,102,191	3.1	4,026	0.6	274
Business	2,418,241	6.9	74,476	10.3	33
Education	1,967,319	5.6	33,998	4.7	58
Engineering	4,322,873	12.3	70,644	9.8	61
Home Economics	1,374,018	3.9	25,204	3.5	55
Pharmacy	851,591	2.4	10,949	1.5	78
Health/P.E.	1,972,987	5.6	32,149	4.5	61
OSU TOTALS	$35,263,368	100.1	720,103	100.1	$ 50

$50/SCH x 45 SCH/FTE = $2,250/FTE Student

STATE FUNDS EXPENDITURES* BY MAJOR FUNCTION (1980-81)

Instruction	$ 35,263,368	59.9 %
Other Instruction	801,720	1.4
Summer Term	1,474,639	2.5
Research	2,100,051	3.6
Library	2,611,193	4.4
Undergraduate Studies	1,306,755	2.2
Student Services	1,130,479	1.9
Physical Plant	8,453,896	14.3
Administration	4,295,027	7.3
Other Administration	1,478,926	2.5
OSU TOTALS	$ 58,916,757	100.0

$58,916,757/720,103 SCH = $82/SCH

$82/SCH x 45 SCH/FTE = $3,690/FTE Student

* Total operating expenditures (including ROH) minus income-reimbursed expenditures

FIGURE 6

PROPORTIONAL SHARE OF PROGRAM REDUCTION/ELIMINATION

1. School of Business: Total reduction = $190,000 Academic units = $115,000

School of Business	41.9%	$48,185	$,
College of Liberal Arts	33.1%	38,065	$,
College of Science	15.7%	18,055	$,
School of Health/P.E.	3.6%	4,140	$,
School of Home Econ.	2.3%	2,645	$,
School of Education	1.1%	1,265	$,
School of Forestry	1.0%	1,150	$,
School of Agriculture	.7%	805	$,
School of Engineering	.3%	345	$,
School of Oceanography	.2%	230	$,
School of Pharmacy	.1%	115	$,
		$115,000	$ 115,000

2. School of Health and P.E. : Health Education Certificate Program
Total reduction = $30,000 Academic units = $18,000

School of Health/P.E.	44.4%	$ 7,992	$,
College of Liberal Arts	21.4%	3,852	$,
College of Science	16.9%	3,042	$,
School of Education	9.0%	1,620	$,
School of Home Econ.	4.2%	756	$,
School of Business	1.7%	306	$,
School of Engineering	.9%	162	$,
School of Agriculture	.5%	90	$,
School of Forestry	.5%	90	$,
School of Pharmacy	.5%	90	$,
		$18,000	$ 18,000

School of Health and P.E. : Physical Education Certificate Program
Total reduction = $38,000 Academic units = $23,000

School of Health/P.E.	41.8%	$ 9,614	$
College of Liberal Arts	21.7%	4,991	$
School of Education	17.6%	4,048	$
College of Science	12.6%	2,898	$
School of Home Econ.	3.9%	897	$
School of Business	1.8%	414	$
School of Forestry	.5%	115	$
School of Agriculture	.1%	23	$
			$ 23,000

CONCLUSION

Why write this paper? Certainly, none of the analytical techniques that were used is terribly sophisticated nor original. Yet their application in the specific contexts described above appeared to be a decisive factor in the success of both the decision-making and decision-taking processes. I am convinced that it was the careful fit of the chosen technique to the particular conception of equity appropriate to each decision period -- not the quality of the data nor the sophistication of the analysis itself -- that proved critical in obtaining institutional consensus for the reduction plans. By this means, the budget reduction decisions gained an appearance of fairness and objectivity that attracted the support of virtually all constituencies of the university.